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ABSTRACT

The implementation of remedial education in the community college has become more urgent with the establishment of open admissions, as is demonstrated in this annotated bibliography. Types of students, their selection into remedial instruction, the experimentation in programs, methods of instruction, and indications of program effectiveness are summarized in the introductory overview. The bibliography compiles 49 references to published and unpublished materials, and consists of eight sections: General Sources; Remedial Education; Developmental Education; Basic Skills; English, Reading and Composition; Communication and Oral Skills; Mathematics; and Science. (RT)

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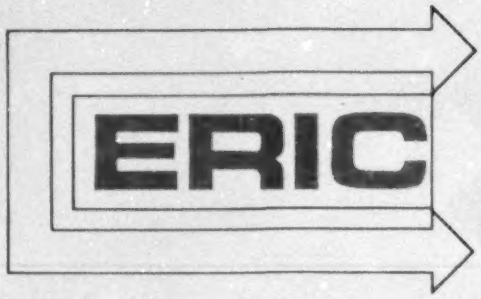

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ABOUT COMMUNITY COLLEGE REMEDIAL AND DEVELOPMENTAL EDUCATION

A Brief highlighting important literature since 1968 about remedial and developmental education in the community college

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This Brief focuses on remedial and developmental education in the two-year college. It consists of eight sections: General Sources; Remedial Education; Developmental Education; Basic Skills; English, Reading and Composition; Communication and Oral Skills; Mathematics; and Science. This literature review is based on references to both published and unpublished materials from a variety of sources, including the ERIC files and journal articles.

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Remedial and developmental education is a function of the two-year colleges comparable to transfer, occupational, and community education. It appeared in the post-World War II period following the national commitment to universal higher education through the Fourteenth Grade or Sophomore Year. The need for remedial and developmental education became more insistent as the two-year colleges began to implement the Open Door policy of admitting any student over 18 years of age, with or without a high school diploma.

Although remedial and developmental education programs enroll students from all ethnic, racial, and socioeconomic groups, the literature indicates that the preponderance of students are from the disadvantaged sectors of the population--Blacks, Mexican-Americans, Puerto Ricans, Native Americans, other ethnic groups and poor Whites. These groups are often collectively known as new students or nontraditional students.

Students in the remedial programs are selected on the basis of test scores, grade point averages, or other evidence indicating that they are high risk by virtue of poor high school or college experience, inadequate preparation for entry into a particular program, e.g., liberal arts, registered nursing, or other vocational program. The Scholastic Aptitude Test (SAT) and the American College Test(ACT scores are widely used in the selection process. National and local test scores in basic writing, communication, mathematics, etc. are frequently used. One college study reported that entering freshmen with composite scores in the lowest category have increased from 28 percent in 1967 to 61 percent in 1973.

Experimentation has been carried on by a variety of methods. Some develop programs in individual subjects such as writing, reading, etc., others develop interdisciplinary, block programs consisting of remedial courses in the basic subjects. Occasionally, in a block program one or less frequently two regular credit courses are included. Credit may or may not be awarded for remedial courses. Where funding is based on student credit hours credit is more likely to be awarded. There is a trend toward awarding credit to make programs more desirable.

The aim of the programs is to improve the effectiveness of the efforts to assist the new students remove deficiencies in reading, writing, communication, mathematics, and to a lesser extent, other subjects and activities associated with learning. Occasionally, a group of colleges may cooperate in an experiment. Some programs attempt to improve achievement in student motivation, allied ego functions, retention or persistence rates, study skills, knowledge of career opportunities as well as the basic skills.

Teaching and learning emphasis may be on peer teaching, tutoring, use of media, individualized instruction, computer assisted instruction, specialized counseling, organizational structure, subject matter content, instructional strategies, counseling services, programmed laboratory experience, small classes, instructional methodology, experiential learning or a combination of one or more strategies including use of behavioral objectives and self-instructional packages.

A profile of the organization of developmental education programs and how they fit into college programs summarizes the information on types of colleges, enrollments, kinds of labs, course titles, tutoring, financial breakdown of tutoring programs, auspices under which programs operate, instructional formats, staffing, lab facilities, reporting patterns of instructors and respondents, program funding and selection of advisory committees. Unique features of the programs are: (1) individualization of materials for the learner; (2) dedication of personnel; (3) tie-in of skills to the content areas.

Another source book, with a particular focus on occupational students, intended for practitioners in developmental programs describes a composite mythical, most successful developmental program.

The few studies that comment directly on costs agree that remedial and development programs are more expensive to operate than regular programs.

Nearly everyone, including critics, acknowledge that the two-year colleges have accepted the commitment to remedial education but many, if not most observers, claim that they are not performing it effectively. Of 225 institutions that applied to participate in the National Project II: Alternatives to the Revolving Door only four of the ten selected as having an exemplary open door program were community colleges; the others were four-year colleges.

Critics point to the failure of the two-year colleges to provide the best possible education commensurate with the students' needs, efforts, motivation and ability. They maintain that the high attrition rates are caused by the absence of individual learner orientation, the failure to instill positive self-concepts, unsatisfactory teacher preparation, inappropriate and ineffective therapeutic counseling, inadequate selection and admissions procedures, inflexible schedule, lack of faculty advising, etc.

Another weakness mentioned is the absence of criteria or guidelines for evaluating student performance where persistence and grades are inappropriate.

With few exceptions the practitioners in charge of the programs report that students who enroll in them do better than do students who do not.

Inherent in remedial education is the feeling of inferiority engendered in students enrolled (tracked) in the special programs. Also, since such large numbers in urban colleges are members of ethnic or racial groups, the programs tend to become segregated.

A proposal to avoid these feelings of inferiority is to create a pluralistic model to enable students to select a program, people, ideas or things in which they can excell.

GENERAL SOURCES

Cross, K. Patricia. Accent on Learning. San Francisco: Jossey-Bass, Inc., 1976.

In Accent on Learning, Patricia Cross takes the challenge of open admissions into the field of instruction to propose new programs for personal development, and methods of instruction that can help all students. Synthesizing over 1000 studies on teaching, learning, and student development, Dr. Cross emerges with a pluralistic model for educating that assumes that everyone is in need of remediation in some area of knowledge. Dividing these areas into people, ideas, and things, she calls for a shift away from remedial instruction to education based on the development of individual strengths. Her model would have each student major in one of the three areas, and minor in the other two, depending on the student's natural potential. Having proposed such a concept, the book emphasizes two needs for open-admissions education: instruction in the traditional curriculum that offers opportunities for mastery, and a total educational experience that provides for the development of excellence in work considered valuable by society. Included are detailed descriptions of various techniques of individualized instruction, innovative programs for student personal development, and courses that teach interpersonal skills. Accent on Learning will be useful to faculty and administrators at all levels of higher education.

Knoell, Dorothy M. "Changing Enrollment Patterns--Changing Functions." The College Board Review, No. 94, Spring 1976.

In this article Dorothy Knoell reviews the strengths and weaknesses of the community college in dealing with today's "new students." She states "The strength of the community colleges had been their ability to respond to state and local needs for new programs relatively quickly and without the infusion of new, special funds. Their weakness has been their inability to evaluate their success with successive groups of new students, except in terms of ever increasing enrollments of all types of students. Community colleges need to propose new criteria for evaluating student performance where persistence and grades are inappropriate, and to take steps to use new measures with the increasing numbers of new students who enroll." Knoell calls for new measures, new criteria, and new definitions.

Moore, William, Jr. Against the Odds. San Francisco: Jossey-Bass, 1970.

Historically, most community colleges have failed to provide the best possible education, commensurate with students' needs, efforts, motivation, and abilities, according to the author. This book offers how-to-do-it, student-oriented advice on how the educational needs of the high-risk student can best be served. A bibliography is included.

Moore, William, Jr. Community College Response to the High-Risk Student: A Critical Reappraisal. "Horizons Issues" Monograph Series. Washington, D.C.: American Association of Community and Junior Colleges, and Los Angeles: ERIC Clearinghouse for Junior Colleges, 1976. 60pp. (ED 122 873)*

It is a widely accepted fact that community and junior colleges have a special commitment to serve students who in other types of higher educational institutions would be considered high risks because they are less likely than other entrants to complete their chosen programs of study. Professor Moore makes clear that the commitment, though well accepted, is ineffectively accomplished. Whether the community college is really able to define or cure academic deficiencies has not been confirmed with hard, unequivocable evidence. The current popular ideas about what causes low achievement in specific groups of students, such as the belief that the students are culturally disadvantaged, have negative self-concepts, and lack motivation; and the current correctives--remedial instruction and therapeutic counseling--are often inappropriate and ineffective. As corrections for the problem, Moore recommends an emphasis on community college teacher preparation, institutional reexamination of selection and admissions procedures, increased faculty advising of high risk students, and increased policy flexibility. A bibliography is appended, and a chapter identifying research needs in this field is included.

Roueche, John E. Salvage, Redirection, or Custody--Remedial Education in the Community Junior College. Washington, D.C.: American Association of Junior Colleges, and Los Angeles: ERIC Clearinghouse for Junior Colleges, 1968. 77pp. (ED 019 077)*

The comprehensive Community College with nonselective admission policies attracts increasing numbers of students with educational deficiences, especially in academic skills, which prevent success in typical college courses. However, while almost all community colleges agree with the open door concept, only about half provide remedial instruction for low achievers. There is little agreement on objectives of remedial programs or on the means to reach their objectives. Remedial programs range in scope from single classes to complete programs, with added activities such as tutoring and specialized counseling. Research on the effectiveness of remedial programs is scarce and tends to be inconclusive. The community college has based its remedial programs on unproved assumptions rather than on research findings. Colleges are faced with a need for program evaluation, recruitment and assignment of competent teachers, clarification of objectives, identification of remedial students, and experimentation with teaching methods.

Roueche, John E., and Kirk, R. Wade. Catching Up: Remedial Education. San Francisco: Jossey-Bass, 1973.

New programs, based on good learning assumptions and self-paced learning techniques, show promise in helping to remedy the problems of high-risk, nontraditional students. The authors describe the rationale and structure of these new programs and assess the extent to which they increase students' persistence, academic performance, and positive feelings toward learning. Flexible scheduling, nonpunitive grading, and the use of peer tutors and counselors are among techniques described and evaluated. A bibliography is appended.

Roueche, John E., and Mink, Oscar G. Toward Personhood Development in the Community College. Paper presented at the Annual Meeting of the American Association of Community and Junior Colleges (Seattle, Washington, April 13-16, 1975). 20pp. (ED 114 137)*

National studies indicate that remedial or developmental programs in the community college have generally been unsuccessful, resulting in inordinately high attrition rates among nontraditional, low-achieving students. A more appropriate system is individual, learner-oriented instruction. The attempt is to shift the students' orientation from external (chance or other powerful individuals determine events) to internal (there is a direct relationship between an individual's behavior and its outcome). The keys to the success of individualized instruction are: (1) systematic design of the total learning environment, (2) provision for multiple levels of entry into carefully ordered instructional sequences, (3) staff involvement personally and professionally, and (4) openness to approaching specific problems (grades, dropouts) on a generalized, fundamental level (locus of control). A study is being made involving a sample of 1,200 students attending several community colleges. The basic research design examines the main effects of (1) instruction, either self-paced or traditional, and (2) counseling, either composite or traditional. Data for the first two years of the project indicate that individualized instruction does produce a shift toward internal locus of control in students, if a period of at least one semester is involved.

Zwerling, L. Steven. Second Best: The Crisis of the Community College. New York: McGraw-Hill Book Company, 1976.

Two major themes appear in Second Best: the selection and distribution functions of the community college, and the underlying principles upon which higher education is based. Arguing that attrition is one of the primary social functions of the junior college, the author examines the ways in which counseling, testing, transfer conditions, and financing work to the disadvantage of the community college student, particularly those from low-income families. Underlying these visible activities are the functions of the school systems in the United States: to teach the student how to handle punitive experiences, to delay gratifications, to follow rather than to lead, and to blame themselves for the outcome of their educational failures. College students who refuse to be cooled out are those who "still retain the strength to resist the school system's final effort to deceive and manipulate them." The book calls for a less hierarchical structure that is designed to allow students to take what they want from the educational experience in a setting of activities that would encourage self-exploration to expand the student's confidence in his own abilities. The author backs his arguments with anecdotal material and current research in the community college field.

REMEDIAL EDUCATION

Aarons, Howell. An Evaluation of an Individualized Interpersonal and Interdisciplinary Team Approach to Remediation at Mohegan Community College. Unpublished paper, 1975. 99pp. (ED 115 341--Available in microfiche only)*

In order to assess the effects of the remedial (foundations) program at Mohegan Community College (Connecticut) on students' academic performance and persistence in college, a study was made of 180 students who had enrolled in the Foundations Program between September 1971 and 1974, and 180 students who had scored below the 50th percentile on the Comparative Guidance and Placement Test but had not enrolled in the program. Students in the control group were chosen by the matched pair technique; scores of enrolled students were sifted for scores equal to those of students in the treatment group. Then, one score was randomly selected for each score in the treatment group. Using the records in the office of the registrar, transcripts of all subjects were examined and a variety of data were collected. Students in the Foundation Program were found to have significantly greater persistence than those in the control group. Students in the treatment group who persisted for a set period of time had higher quality point averages (QPA's) than classmates not enrolled in the program. Whether a student volunteered for the program or was pressured to enroll, his level of persistence was likely to be about the same. A survey of the literature is included and a bibliography is appended.

Benenson, Thea Fuchs. Remediation of Non-Cognitive and Achievement Deficits in Disadvantaged Community College Freshmen--Project LINK. ESEA Title III Project No. 42-736-109. Bronx, N.Y.: Bronx Community College, 1974. 70pp. (ED 105 950)*

During fall 1972, Bronx Community College inaugurated Project STIR, an interdisciplinary, block-programmed project designed to facilitate an intense, collaborative remediation program for entering Liberal Arts freshmen needing remedial assistance in reading, writing, and mathematics. This project was later renamed Project LINK, and was expanded to offer special courses for pre-nursing and evening students and to allow the enrollment of more Liberal Arts students. It was also expanded to include a full-semester orientation seminar for student counseling. This report presents the final assessment of the program. Results indicate that the program did little to reduce attrition, to improve achievement motivation or allied ego functions, or to improve writing or math ability. It was successful in improving reading competency. Methods of program evaluation are described, and faculty perceptions of the benefits and drawbacks of the program are noted.

Colston, James A. Minority Programs in Higher Education: Alternatives to the Revolving Door. Paper presented at the Annual Convention of the American Association of Community and Junior Colleges (56th, Washington, D.C., March 17-19, 1976). 9pp. (ED 125 711)*

National Project II: Alternative to the Revolving Door is a project designed to evaluate and refine existing programs for low-achievers. Under sponsorship of the Fund for the Advancement of Post-secondary Education, the project was opened to postsecondary institutions throughout the country which felt they were doing a commendable job of meeting the needs of disadvantaged students. Of the 225 institutions applying to the fund under the program, only ten were selected as having developed an exemplary open door program. The selected institutions included four two-year colleges: Bronx Community College (Bronx, N.Y.), Oscar-Rose Community College (Midwest City, Oklahoma), Southeastern Community College (Whiteville, N.C.), and Staten Island Community College (Staten Island, N.Y.). This report describes the exemplary programs at these four two-year colleges. It reports on the kinds of remediation courses offered, the administrative organization of the program, the enrollment capabilities, methods of staffing, sources of funding, and the evidences of program success.

Cosby, Jon P. Remedial Education--Is It Worth It? Unpublished paper, 1974. 48pp. (ED 099 067)*

A cost analysis of the developmental education program on the North Campus of Florida Junior College at Jacksonville revealed that in the 1972/1973 fiscal year the special credit courses offered for remedial students cost over 80 percent more than regular credit courses. Among the developmental courses offered (English, reading, mathematics, and social science) reading was found to be the most expensive. Most of the cost, nearly 70 percent, was directly attributable to instruction. All of these developmental courses operated at a deficit; that is, their costs were greater than the funds received via state funding and student tuition. The high cost of these courses emphasizes the need for additional funding if the Florida community colleges are to meet the needs of the significant number of students having remedial deficiencies. Appended is a brief description of the program.

Farrell, Thomas J. Opening the Door: An Analysis of Some Effects of Different Approaches to Educating Academically High-Risk Students at Forest Park Community College, 1971-72. Doctoral dissertation, St. Louis University, 1973. (Available from University Microfilms, 300 N. Zeeb Road, Ann Arbor, Michigan 48106, Order No. 74-24,070.)

The General Curriculum (GC) at Forest Park Community College in Illinois was designed as a one-semester initial-entry program for academically high-risk students. The full-time GC student was required to take a series of basic academic courses in reading, writing, and mathematics, a human potential seminar, a transfer course (Applied Accounting, Introduction to American History, Introduction to American Politics, Introduction to Biology, or Introduction to Sociology), and a general studies course (Basic Humanities, Basic Science, Basic Sociology, City Politics, or Contemporary Science). Such students spent 19 hours per week in class, but earned only 11 or 12 credits depending on the transfer course taken. This study was conducted in order to determine the extent to which academically high-risk students who enter the GC Program succeed in college as compared to academically high-risk students who enter the college in the traditional manner. The current program, the method of student selection, and relevant literature are reviewed in detail. Results of an investigation of student records indicate that GC students did not earn higher grades or complete more credit hours and that the program seemed to work against them in that they were required to take a series of basic skills courses which did not count toward a degree. Recommendations are made, and a bibliography is included.

Fishman, Florence, and Dugan, Marjorie. Alternative Programs and Services for the Non-Traditional Student. Unpublished paper, [n.d.]. 10pp. (ED 129 380)*

This paper describes support programs and services at the Community College of Philadelphia (CCP) designed to provide alternatives for the nontraditional student. All entering students scoring below the 20th percentile on the reading section of the Comprehensive Test of Basic Skills are advised to enter a program named Project II, a block scheduled program containing two credit courses and two noncredit remedial reading and writing courses. Students who have been away from school, or whose academic preparation is weak, have an option to enter the Cooperative Learning Program, a two-semester program offering courses from almost all curricular areas of the college as well as training in study skills, career information sessions, and tutoring. Counselors are attached to the programs to follow up on students, providing assistance as necessary. Some data on these programs already indicate success: retention rate for the Cooperative Learning Program was 91% compared to 67% for the college overall, and over 50% of the students enrolled in the program advanced to sophomore status after one year while only 15 to 25% of the general college freshmen did so. A discussion of the tutoring component of the program and the services of the Learning Laboratory is presented, as is a brief discussion of future institutional responses to nontraditional students.

Gwynne, Margaret, and Others. Evaluation of Remedial Programs in Community Junior Colleges: Community College Presidents' View. New York: Columbia University, 1974. 8pp. (ED 089 810)*

This report describes a survey which was conducted to determine community junior college presidents' views of how to evaluate remedial programs. Questionnaires were mailed to 166 schools in the New England and Middle Atlantic States. Since no institution forwarded a copy of any formal evaluation guidelines, it is suggested that very few of the community college sample have any formal evaluation of remedial education courses or programs. It was found that the faculty was involved in program evaluation in more than half the community colleges responding and the academic dean in slightly less than half. The questions and responses are included in the report.

Huhn, Ralph H., Jr. Learning Skills for Students in Vocational Education. Paper presented at the Annual Meeting of the International Reading Association Plains Regional Conference (4th, Wichita, Kansas, March 4-6, 1976). 7pp. (ED 131 425)*

This paper describes the development of a program to teach reading and learning skills at the Kansas City, Kansas Community College, which was designed to decrease academic failure in vocational education programs. Primary goals of the program were to develop a screening test to identify students in need of assistance, before academic problems arose, and to implement a course designed to teach the specific skills needed for academic success. Performance on the screening test, which consisted of comprehension questions drawn from students' textbooks, correlated highly with the later success or failure of nursing-education students in their particular vocational program. Five replications of this study revealed similar correlations. In addition, over the six years of its implementation, the failure rate in the nursing program decreased from 45% to 15%.

Larson, Howard B., and Olswang, Steven G. (Eds.) Proceedings: Conference on Compensatory/Remedial Education, April 3 and 4, 1975. Occasional Paper No. 24. Seattle: Washington University, 1975. 67pp. (ED 112 992)*

The intent of this annual conference is to provide a medium of exchange for practitioners in the field, with each person acting as a resource person for the others. To provide topical focuses, two presentations were made: Dr. Joan Roloff discussed "The Place of the Learning Center in Remedial/Compensatory Education in Community Colleges," and Dr. Henry Fea discussed "The Affective Component of Study." Dr. Roloff typifies the new wave of remedial instruction, personalization of teaching. The concept of incorporation of the classroom setting with individualized instruction in the learning center, utilizing the discipline instructor, as well as the specialist, widens the impact of educational aid available to the student. Dr. Fea examines six affective elements of study which yield evidence that the affective component may be more potent than the cognitive component. His categorizations include: the unfinished task, busy work, remembering and forgetting, time planning, rationalization, and personalization of material. The majority of the conference was planned

as group discussion with four designated topics: reading, mathematics/ science, English, and developmental centers. Two papers are included on reading. The first discusses content areas and informal diagnosis of level of reading attainment, and the second provides a confluent reading/writing fundamentals curriculum.

The Peer Teaching Program of Community College Studies. Miami, Fla.: Miami-Dade Junior College, 1972. 55pp. (ED 060 837)*

During the fall semester of 1971, a peer teaching program was started in biology, physics, psychology, social science and reading classes at Miami-Dade Junior College (Florida). While the specific responsibilities of the peer teachers differed in each class, generally they were expected to assist the students in learning basic skills and supplement the teacher by working individually with students having difficulty. Peer teachers had to demonstrate some skills in the subject and then received a brief orientation to their work; at the completion of the class, peer teachers received grades and a written evaluation. Included are graphs showing the changes in students' grades before and after working with peer teachers. This document is mainly a collection of statements by instructors assisted by peer teachers, personal reactions of students toward their peer teachers, and reflections by the peer teachers themselves. Each of these groups, for the most part, judged the program to be a success.

Roueche, John E., and Kirk, R. Wade. An Evaluation of Innovative Programs Designed to Increase Persistence and Academic Performance of High Risk Students in Community Colleges. Final Report. Washington, D.C.: Office of Education (DHEW), 1972. 69pp. (ED 067 094)*

This study assesses the effectiveness of innovative programs for high risk students at four community junior colleges with somewhat different approaches to remedial education. Each program is described in terms of organizational structure, subject matter content, instructional strategies, counseling services, philosophy and objectives, grading practices, and student selection criteria. Effectiveness was assessed in terms of student persistence (number of semesters of full-time enrollment) and academic performance (grade point average) for both program and control group students. Both groups of students were stratified according to ACT scores, race-ethnic group, and academic year. General conclusions were: (1) high risk students in special programs tend to persist to a greater degree and achieve academically at a higher level than comparable high risk students in regular programs; (2) there is an indication that each year academic performance and persistence rates of high risk students in special programs are increasing; and (3) minority group students tend to persist and achieve academically to a greater degree than majority group students.

DEVELOPMENTAL EDUCATION

Bourn, Ken. Self Concept Development for High Risk Students in the Community College. Paper presented at the Annual Meeting of the College Reading Association (20th, Miami, Florida, October 20-23, 1976). 14pp. (ED 129 394)*

A study was conducted to ascertain whether a basic skills development program, an individualized, programmed laboratory experience in which students contracted to work toward a self-defined resolution of their skill deficiencies, would result in a measurable change in the self concept of high-risk students enrolled in the program at Essex Community College (Maryland). The Tennessee Self Concept Scale was administered to the 11 students enrolled in the class at the outset and the conclusion of the semester. Actual growth in self concept was calculated by subtracting the pre-test score from the post-test score with the extent of the student's self concept change rated as a percent of the actual growth score in relation to potential growth. Analysis of the data revealed the percent of growth in self concept of the study subjects ranged from -1 to 57. Student grade point averages (GPA) were also used in the evaluation: five students showed a decline in GPA compared to the previous semester, three an increase, and for the remaining three there were no comparable data. It was concluded that growth in self concept was achieved but was not always directly reflected in student GPA. When other variables such as course loads and persistence are considered, a growth relationship can be seen.

Compensatory/Developmental Programs in Texas Public Community Colleges: Report of a Survey. Austin: Texas College and University System, 1975. 12pp. (ED 110 133)*

Forty-two of 47 public community colleges in Texas currently offer developmental/compensatory programs. Programmatic goals fall into two categories: (1) the improvement of cognitive skills to the extent that students can progress into credit courses; (2) affective development to improve student self-concept, provide motivation and a successful educational experience in order to reduce attrition rates. Students are generally counseled into the programs on the basis of low scores on entry exams, and often have a history of low scholastic achievement, are returning to school after a long absence, or are educationally or economically disadvantaged. Although the programs are remarkably diverse in extent, nature, and organizational structure, they are characterized by small classes, innovative instructional methodology, and a redefinition of the roles of instructor and counselor, assigning counseling as a part of the teaching process. The difference in organizational structure has resulted in a variety of accounting procedures; thus, little data are available regarding relative costs. Most of the responding colleges have instituted some evaluation or follow-up procedures for their programs. Appended are a summary fact sheet, enrollment and contact hour data for the programs, and formula rates for funding, fall 1974.

Conference Proceedings: Annual Ohio Developmental Education Conference (2d Cleveland, October 6-7, 1974). Cleveland, Ohio: Cuyahoga Community College, 1975. 94pp. (ED 104 460)*

For this conference "developmental education" was defined as "any program which assists students in overcoming any deficiencies they may have in their preparation for post-secondary education." This document includes summary reports of panel discussions and the texts of keynote addresses. Panel session topics include: (1) Developmental Education, What Is It?; (2) Methods of Evaluating the Effectiveness of Developmental Education Programs; (3) Counseling Students in Developmental Education; (4) Identifying and Recruiting Students in Need of Developmental Education; (5) Developmental Education Programs for Adults Returning to Formal Schooling; (6) What Does Research Say About Developmental Education: What's Being Done in Developmental Education in Other States?; and (7) Finding Funds for Developmental Education. Keynote addresses include a speech by Dr. Nolan M. Ellison, President of Cuyahoga Community College, entitled "Developmental Education or Educational Development, Means or Ends?" and a speech by Dr. James A Norton, Chancellor of the Ohio Board of Regents, entitled "Closing Comments on Issues in Developmental Education." A list of references for a resource development library, evaluations of the conference, a list of conference participants, and a short bibliography on various topics pertinent to developmental education are also included.

Curran, Faye. Developmental Education Through the Eyes of the Special Interest Group for Two Year Colleges of the International Reading Association. Unpublished paper, 1975. 22pp. (ED 109 656)*

The Developmental Education Questionnaire was mailed nationwide, in November 1974, to members of the Special Interest Group for Two Year Colleges of the International Reading Association. Responses were made by 109 of the 252 members. The purpose of the questionnaire was to develop a profile of the organization of developmental education programs and how they fit into college programs throughout the country. The data from the questionnaire are analyzed, and tables and discussions are presented on the following topics: types of colleges represented, day and night enrollments, kinds of labs, course titles, tutoring, financial breakdown of tutoring programs, auspices under which programs operate, instructional formats, staffing, lab facilities, reporting patterns of instructors and respondents, program funding, and selection of advisory committees. Three major themes recurred in exploring the unique features of developmental education: (1) the individualization of materials for the learner, (2) the dedication of personnel, and (3) the tie-in of skills to the content areas.

Jelfo, Donald T. An Evaluation of the Developmental Education Program at Cuyahoga Community College Eastern Campus. Unpublished paper, 1974. 37pp. (ED 099 036)*

The purpose of this study was to evaluate the developmental education program of the Eastern Campus of Cuyahoga Community College. An evaluative model was constructed by accepting the performance standards and program guidelines that Roueche and Kirk listed in "Catching Up: Remedial Education" (1973), after their study of five successful programs. The components of the Eastern Campus program were described and found in a number of significant areas to differ from the model. Data on the academic performance of a sample of developmental students for the 1973-74 academic year were collected and presented. Interviews of faculty, counselors, and paraprofessionals were also conducted. On the basis of the data collected, recommendations were made to bring the Eastern Campus developmental program into line with the guidelines of Roueche and Kirk.

Mink, Oscar G., and Watts, Gordon E. Reality Therapy and Personalized Instruction: A Success Story. Unpublished paper, 1973. 12pp. (ED 115 323)*

The Advanced Studies Program (ASP) at Southeastern Community College (Whiteville, North Carolina) is a developmental studies program that offers freshman courses in English, biology, and psychology to approximately 75 students. Learning activities are individualized and self-paced, and each ASP course has behaviorally stated objectives. Instructional techniques include the use of self-instructional pacakages, programmed materials, and various audio-tutorial aids. Through these individually styled instructional components, and reality-based counseling strategies, ASP attempts to internalize the external orientations of nontraditional students, thus greatly enhancing their chances of academic success. Rotter's Locus of Control Scale was administered to 77 freshmen prior to ASP enrollment. These students were given the scale again at the end of the first and third quarters. Of the 77 students entering ASP, 60 completed the spring quarter (77.9 percent). This persistence rate is higher than those reported by Monroe (1972) for community college students in general. Control orientation for ASP students generally shifted toward greater internality, and grade point averages improved with gains in internality. Recommendations are made for further research, and a bibliography is appended.

Overview of Developmental Studies for Occupational Students: A Source-book for Post-Secondary Programs. Research Publication 76-4. Ithaca: State University of New York, Cornell Institute for Research and Development in Occupational Education, 1976. 63pp. (ED 128 031)*

This publication is intended to be used as a sourcebook and reference by practitioners interested in postsecondary developmental programs, with a particular focus on occupational students. The

information presented was derived from a statewide survey of staff members involved in the operation of developmental programs in 51 two-year colleges and 10 Educational Opportunity Centers in New York State (58% responded). Part I, State of the Art, compiles the survey data regarding college and student characteristics, developmental program characteristics, program components, and ratings of program success. Part II, Program Descriptors, describes a composite mythical most successful developmental program, and compares survey responses by the various types of institutions surveyed to the composite profile. Part III, Program Resources, lists recommended resources for reading, writing, study skills, math, and vocational-personal/decision-making programs in regard to desired outcomes, standards of success, strategies/approaches, measurement tools, instructional materials, and modes of instruction, and compiles consensus recommendations for programmatic standards. Part IV, Human Resources, lists respondents willing to serve as contact persons.

Reimanis, Gunars. Student Attrition and Program Effectiveness. Paper presented at the Annual Forum of the Association for Institutional Research (Vancouver, British Columbia, 1973). 12pp. (ED 132 988--Available in microfiche only)*

This paper reports the effectiveness of seven different programs at Corning Community College (New York) designed to influence those factors associated with student attrition--low self concept of ability, high debilitating anxiety, low internal reinforcement control, and lack of goal and value clarity. The underlying theme of each of the programs has been to help students understand that the college faculty and administration are genuinely interested in the personal as well as academic growth of the student and know that incoming students may not have clear values or goals, and that it is natural for students to be apprehensive about things they are not familiar with. The programs include weekly "rap" sessions for Economic Opportunity Program students, a short-course in achievement motivation training, locus of control counseling, an Early Orientation Program for students with undecided educational goals, training in affective/confluent education principles for technical career faculty, an in-service faculty program to facilitate student-centered classrooms, group counseling for high anxiety nursing students, and encounter groups to improve student self-concept. Evaluation data for program participants and controls show that these efforts in improving student performance and reducing attrition have been more effective than purely "remedial" programs in academic areas.

Swofford, Ronald, and Swofford, Joyce C. Developmental Studies in North Carolina and Virginia: A Constant Search for Anything That Will Work. Unpublished paper, [n.d.]. 10pp. (ED 082 727)*

Replies to a questionnaire relating to development programs in 40 community colleges and technical institutes in North Carolina and Virginia are provided. The questions that comprised the questionnaire were: (1) Describe your procedure for determining the math and English proficiencies of entering freshmen; (2) Do you require for those students who do not meet the proficiency levels any developmental courses that

must be taken before the student can enroll in the scheduled courses for his particular curriculum? Please explain; (3) Describe your developmental studies program; (4) What kind of changes have you made in your developmental programs since you began operations?; (5) Do you anticipate any changes in your developmental studies program that might generate more success than you already have? If so, what kind of changes?; and (6) Has a terminal program for mature adults who have few or no skills in reading, writing, and arithmetic been adapted from your developmental studies program? If so, how was it done? And if not, do you think one would work? If you have such a program, how would you treat a graduate of this terminal program who then desired to enter either a vocational or transfer curriculum, and who still didn't meet the proficiency requirements in verbal or math skills to the extent needed in the desired curriculum? Results of the survey showed that there were almost as many different programs and methods as there were schools. Most were, however, similar in their emphasis on secondary and elementary-level English, reading, and math. Several schools also reported remedial programs in other fields.

BASIC SKILLS

Carter, Larry G. Developmental Studies Project, Post-Secondary Disadvantaged. Final Report. Canandaigua, N.Y.: Community College of the Finger Lakes, 1976. 46pp. (ED 131 888)*

The PACE (Personalized Approach to College Education) program at Community College of the Finger Lakes was designed to provide basic academic skill development in reading, English, and mathematics for students with academic records in the bottom quartile of the entering freshman class. The program emphasizes student responsibility for learning and team teaching approaches. PACE goals and objectives for the overall program, and for teachers, students, and counselors are described in this document, followed by descriptive evaluative data on student achievement during the second year of the program's operation. All PACE students were pre- and post-tested in each academic area to ascertain the degree of their achievement in the PACE program. The following results are reported for students enrolled in the program in the second semester: (1) 68% of the students showed test score increases in English; (2) 55% showed increased mathematics scores; (3) 71% showed reading score increases; and (4) the dropout rate for PACE students for the year was 32%. Reports of outside evaluators of the PACE program are attached and a table showing outcomes for each of the PACE students is included.

Crowl, Lynda C. Learning Skills Centers in Kansas Vocational Schools. Paper presented at the Annual Meeting of the International Reading Association (21st, Anaheim, California, May 10-14, 1976). 8pp. (ED 123 597)*

This paper discusses learning skills centers in Kansas connected with area vocational-technical schools and community junior colleges. These centers are designed to offer basic skills instruction in reading, composition, math, and study skills areas to students who cannot succeed in a vocational program because of deficiencies in one or all of these areas. The students who use these centers are classified as educationally disadvantaged by the fact that they cannot succeed without special help with skills traditionally classified as academic. Each of the basic skills centers is different and each strives to make its curriculum meet the needs of the vocational students and instructors it serves. There are, however, characteristics that are present in all basic skills programs. They are to accept the students for what they are, to tailor the instruction to fit the individual needs of the students, and to provide basic skills instruction relevant to help students find success in their chosen vocational fields.

Rose, Robert R., and Others. The Evolution of Learning Assistance in a Community College. Paper presented at the Conference on English Education of the National Council of Teachers of English (St. Louis, April 6-8, 1972). 12pp. (ED 061 940)*

This paper describes the three phases in the evolution of the Mount Royal College (Canada) Learning Assistance Program, beginning with the clinical approach (1969), moving to a credited class structure (1970), and finally to the present non-credit workshop approach (1971). The Learning Assistance Program was established to help students needing assistance in basic skill areas such as reading, writing, listening, and mathematics. The workshop approach has had the highest student retention rate of any of the alternatives tried. Students entering the program are given diagnostic tests to determine their learning difficulty, then given the choice of three alternative learning styles: individual, independent, and group. Programmed learning packages are being developed, and an intern program utilizing students from a nearby university has increased the staff available to help students in the program.

Rosella, John D. Effects of the Basic Studies Program on the Scholastic Performance of a Selected Group of Low-Achieving Students Enrolled at Bucks County Community College During the 1973-1974 Academic Year. Newtown, Pa.: Bucks County Community College, 1975. 15pp. (ED 119 794)*

Bucks County Community College's Department of Basic Studies is a comprehensive developmental education program which involves work for credit in basic academic skills--reading and study skills, writing and mathematics. In addition, special counseling is given to students in order to change negative habits and attitudes, and to develop a

more positive self-image. During the 1973-74 academic year, a study was conducted to determine the effect of the Basic Studies Program. Students included in the study ranked in the bottom 40 percent of their high school graduating class and scored at the 25th percentile or below on the Comparative Guidance and Placement Test. This study contrasts 86 students participating in the Basic Studies Program (experimental group) with 97 nonparticipants (control group). The average GPA earned by the experimental group was 2.285, while the control group earned an average GPA of 1.77, a difference which was statistically significant. While 75 (87 percent) of the experimental group participants returned to Bucks for the fall 1974 semester, only 59 (61 percent) of the control group returned. The experimental group also proved to be more successful in English Composition I and mathematics than the control group. They more frequently earned grades of "C" or better, and showed more persistence. Tables of data are appended.

Vaughan, George B., and Puyear, Donald E. After the Open Door: An Approach to Developmental Education. Los Angeles: ERIC Clearinghouse for Junior Colleges, 1972. 19pp. (ED 059 714)*

Based on the learning theories of Benjamin S. Bloom, the program described in this report aims to help students develop basic skills for success in college work. The program, created for Virginia Highlands Community College, centers around English and mathematics learning laboratories. All students can enroll in regular college level courses, but those with weak academic backgrounds or low entrance examination scores also participate in one or more laboratories. There the student can master the course objectives at his own rate and with the help of a variety of instructional aids. Advantages of this program include: (1) the students using the labs were not segregated from other students; (2) the lab students were given a clear diagnosis of their learning problems and the measurable objectives which they had to master; and (3) lab students received academic credit toward their graduation rather than having to take non-credit "remedial" courses. In general, students using the labs, either for one term or for the whole first year, had higher GPA's at the end of the year. The statistical information given, however, is used to illustrate trends and not to document conclusions.

ENGLISH, READING, AND COMPOSITION

Klink, William. English Instruction in Maryland Community Colleges. Paper presented at the English Articulation Meeting (University of Maryland, January 27, 1975). 6pp. (ED 115 346)*

This paper reviews a 1974 tabulation of freshman English programs made by the Maryland Association of Departments of English. Of 20 schools surveyed, including almost all the Maryland community colleges, 15 offer remedial courses, 18 have remediation facilities, and 15 grant academic credit for remedial courses. All of the colleges have regular English composition courses (English 101), complemented by some sort of exemption plan. While remedial courses concentrate

on sentence and rudimentary paragraph writing, English 101 is concerned with the application of standard grammatical English to thought processes involving various levels of inquiry. The case of Charles County Community College is cited as an example of successful articulation between the remedial and regular English composition courses. In spite of course success in English 101, there has been a decline in the percentage of students choosing to take literature courses. The elimination of the English literature requirement has been partly responsible for this, but the extraordinary growth of technical writing courses, of which the number of sections has quadrupled over the past four years, has had even greater impact. A trend is seen toward English department alliance with the practical rather than the fine arts.

McDonald, Ellen J.B. The Development and Evaluation of a Set of Multi-Media Self-Instructional Learning Activity Packages for Use in Remedial English at an Urban Community College. Doctoral dissertation, Memphis State University, 1973. (Available from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106, Order No. 73-22,636).

The purpose of this investigation was to compare the effects on achievement and attitude of a method of teaching using multi-media self-instructional learning activity packages, with the conventional method of teaching by lecture and discussion. The subjects were 126 community college students enrolled in remedial English classes. Two instructors were each randomly assigned to a control group and an experimental group. The experimental groups received instruction in the ten basic sentences patterns of structural linguistics by means of three multi-media self-instructional learning activity packages developed for this study. The control groups were instructed in the same content matter by the conventional lecture-discussion method. The investigation was conducted during a four-week period in the winter of 1973. Some of the results indicated that: students in the experimental group showed a significant difference in post-test scores on the criterion measures; and students in the experimental group on the post-experimental attitude measure scored significantly higher than students in the control groups, although a pre-test analysis revealed no significant differences between the groups.

Rudisill, Vivian A., and Jabs, Max L. Multimedia Instruction in Basic English. San Antonio, Tex.: San Antonio College, 1976. 12pp. (ED 128 056)*

Individual, self-paced, and Computer Assisted Instruction (CAI) characterize the English Multimedia Laboratory at San Antonio College, where entering freshmen with composite American College Test scores in the lowest category of 1-15 have increased from 28% in 1967 to 61% in 1975. The multimedia lab, operational since 1973, replaced the relatively ineffectual Basic English remedial course. Personalized instruction is the primary characteristic of the laboratory, each student moving at his own pace through ten learning areas according to specified behavioral objectives. CAI plays an integral part, providing nearly instantaneous feedback and additional tutoring, as necessary,

to student users. CAI has also been adapted for use with hearing-impaired students. Results of the multimedia laboratory, in addition to increased levels of competency, include: individualized learning of basic skills at the student's own level of performance, individual review and testing, increased motivation, immediate reinforcement, improved attendance and student involvement, a sequence of instruction, and self-tutoring. A comparative study of students' subsequent freshman composition grades has shown that grades of D and F decreased from 54.02% in pre-lab years to 38.64% since implementation of the lab.

Schroeder, Emma G. Directed Studies Reading Program. Wharton, Tex.: Wharton County Junior College, 1975. 78pp. (ED 110 926)*

This program, included in "Effective Reading Programs...," serves from 10 to 40 junior college students each semester. The students come from several ethnic groups and are from low-income families in a small rural town. They represent various age groups, including adults returning to school after years of absence. Begun in 1971, the program consists of a series of individualized laboratory reading courses offered for credit by Wharton County (Texas) Junior College. The program is designed to assist the student in becoming a better reader by supplementing regular reading classes. Four semester-length courses focus successively on word attack skills, vocabulary development, and comprehension; critical reading and newpaper reading skills; various other study skills; increasing speed and comprehension; and skimming and scanning and further work in critical reading skills. Each student takes a diagnostic exam and has an individualized reading program prepared by the reading specialist based on the results of the exam. The student then enters into a contract with the reading instructor, who establishes the guidelines for student objectives and responsibilities.

Vik, Gretchen N. Developmental Composition in College. Doctoral dissertation, University of Florida, 1975. (Available from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48016, Order No. 76-12, 144.)

This thesis was a descriptive study of developmental writing programs in two- and four-year colleges. The following areas were investigated: identifying students who need extra language skills help; placing students in flexible programs so they can learn what they individually need to know; evaluating materials to teach skills; evaluating materials and methods of teaching the composing process itself; designing a writing program which can prescribe for student language skills problems; evaluating some existing writing programs for developmental students, and training graduate assistants to teach students to write. A chapter on administration of developmental writing programs includes training of graduate assistants, the pros and cons of assigning college grades and credit for such courses, and scheduling groups of developmental classes. Nine successful developmental writing programs are discussed in detail with an emphasis on methods that are adaptable to other schools. From an analysis of the successful programs, it was concluded that the differences between good developmental

composition classes and regular composition classes are individualization of subject matter, well-trained staff, and counseling of students.

Wagner, Eileen N. "Developmental English: More Harm Than Good?" Teaching English in the Two-Year College, 1 (3): 147-152; Spring 1975.

Reviews the current research on developmental English instruction, concluding that more evaluation of college level remedial programs should occur.

COMMUNICATION AND ORAL SKILLS

Griffin, Thomas E. Differences Between Developmental Studies Communication Students and Regular College Communications Students in Their Orientation to Symbols and Their Meanings. Unpublished paper, 1975. 29pp. (ED 103 054)*

This study tested the hypothesis that regular communication students are oriented to more symbols and their meanings than are developmental communication students and thus have more ways to receive information. One-hundred students (50 regular and 50 developmental) at Central Piedmont Community College were given the 220-item Cognitive Style Interest Inventory, developed by Oakland Community College. The inventory measures major and minor cognitive style orientations. Results substantiated the hypothesis. Of the four major theoretical symbol orientations (auditory, visual, linguistic, and quantitative), regular students had a mean of 1.44 major orientations while developmental students had a mean of 1.04 major orientations. Fifteen developmental students and eight regular students were found to have major orientations to no theoretical symbols. Of the fifteen qualitative symbol orientations, regular students had a range of 3 to 15 major orientations with a mean of 9.94. Developmental students had a range of 0 to 13 major orientations with a mean of 6.84. Implications for instruction are discussed. A list of symbols and their meanings, a graph of theoretical symbolic orientations of the two groups, a graph of qualitative symbolic orientations of the two groups, a qualitative orientation profile for each group, a literature review, and a bibliography are included.

Kerstiens, Gene. A Pilot Study to Assess the Effectiveness of the Recruitment Strategies and the Treatment of Non-Traditional Students Involved in a Short-Term Communications Course. Unpublished paper, 1976. 45pp. (ED 130 745)*

A study was conducted to identify and evaluate effective recruitment strategies and the effectiveness of a short-term, individualized audio-tutorial course designed to improve the communications skills of non-traditional students. Subjects were 30 students enrolled in and completing the individualized course, Learning Skills I, and 30 control students. Experimental group students were interviewed in

order to determine how they were recruited for the course. Results indicated that 67% of the subjects had been purposefully recruited into the course by counselors, the learning skills center, or by instructors. Subjects were pre- and post-tested on The New Purdue Test in English. Analysis of the mean scores for the experimental and control groups revealed no significant differences in the scores. No evidence was found indicating that the instructional treatment brought about any significant gains in the communications skills of the members of the experimental group.

Morrison, James L., and Stoltz, Ronald. "The Role of Oral Communication for the Culturally Different College Student." College Student Journal, 10 (1): 4-7; Spring 1976.

This article discusses the importance of oral communication in remedial programs for culturally different college students. The use of non standard English as a credit course in college academic programs and its implications are presented.

MATHEMATICS

Baldwin, James, and Others. Survey of Developmental Mathematics Courses at Colleges in the United States. American Mathematical Association of Two-Year Colleges, 1975. 64pp. (ED 125 688)*

A 40-item questionnaire designed to investigate the variety and scope of Developmental Mathematics Courses (DMC) offered at colleges and universities throughout the United States was administered to a selected sample of two- and four-year colleges in October 1974. The 104 respondents represented 21 states. Most (58%) of the colleges responding reported total student enrollments of 3,000 or less. Almost all the colleges (96%) expressed a need for DMC and offered developmental programs in English (86%), reading (89%), and mathematics (91%). Most of the colleges (70%) had had DMC for two to ten years and offered one (28%) or two (24%) different DMC courses. The areas covered were arithmetic (84%), elementary algebra (89%), geometry (35%), and trigonometry (34%). Most DMC classes (66%) were held in a regular classroom, but some (32%) used a math lab. The instructional methods used most frequently were lecture method (55%), programmed book instruction (54%), supplemental tutoring (37%), and work books or work sheets (29%). The principal grade awarded to students was the traditional letter grade. Regardless of the grading system used, most colleges (66%) offered some form of credit for DMC. Other results are reported, previous research studies in the field are reviewed, recommendations are made, and the survey instrument is appended.

Moore, Claude. A Study of the Effectiveness of the Developmental Mathematics Courses at Danville Community College. Danville, Va.: Danville Community College, 1973. 20pp. (ED 097 049)*

To gain statistical information as to the success of the Developmental Mathematics course (Math 01) at Danville Community College, data were collected on 77 students who completed the course between the winter quarter 1970-71 and the fall quarter 1971-72. The grades of this group in six subsequent mathematics courses were compared with those of students who did not take Math 01. The results of the study, which are tabulated, showed that Math 01 was not entirely successful in preparing students for two subsequent courses, but students were well prepared to enter four courses in that they had better than a "C" average in each of the four. The students who had taken Math 01 also made better grades than the group who had not in three of the subsequent courses. (An appendix provides topic descriptions of the content of each of the math courses.)

Muha, Joseph G. A Study Comparing the Traditional Approach Versus an Experimental Approach to Teaching Remedial Math in the Community College. Unpublished paper, 1974. 28pp. (ED 104 488)*

To assess the effects of traditional and experimental approaches to a remedial mathematics course at Pasadena City College, data was collected on a control and experimental class of the course. The control class was taught by a teacher who was assigned the class in order to complete his teaching load; this class was taught in the traditional manner--lecture, demonstration, homework, frequent testing, and standard grading distributions. The experimental class was taught by a teacher who volunteered for the assignment and who expressed a desire to work with the remedial student; only two tests (midterms and finals) were administered and midterm grading was liberalized to provide the maximum amount of positive reinforcement and to discourage dropouts. Text material for both classes was the same, but the teacher of the experimental class also used enrichment materials suited to the abilities of the class. The results of pre- and post-tests showed that the experimental group achieved at a significantly higher level than did the control group. The results of three administrations of the Osgood Semantic Differential show that the experimental group viewed itself more positively in all three areas studied: ability in math, success in math, and feeling about math. Withdrawal rates for both classes were the same. The Osgood test is appended.

Riggle, G. Thomas II. Developmental Mathematics From the Student's Point of View. Unpublished paper, 1975. 52pp. (ED 105 926)*

Since 1970, the developmental mathematics program at the Metropolitan Campus of Cuyahoga Community College (Ohio) has consisted of three courses of individualized instruction. A pre-test is given to determine proper course placement and all modular units are

accompanied by regular lectures. This practicum was designed to determine the attitudes, perceived needs, and recommendations of the students enrolled in the program, and to ascertain the degree to which they utilized the supplementary services (peer tutoring, audio-slide presentations, and computer tutorial service). A stratified sample of 91 students (6.4 percent of the total developmental math enrollment) was selected. The attitudes of day and night students are compared, as are those of students enrolled in each of the three program courses. Results indicate a general satisfaction with the program; however, many students did not use the supplementary services and many had never heard of them. The author recommends that (1) each student be given a tour and an explanation of the facilities and services; (2) all students be required to take the placement test; (3) sample unit tests be available for student review; (4) tutors become familiar with texts used in class; and (5) a coordinator work to inform the night faculty of the intentions of the program. The questionnaire, with tabulated responses, is appended.

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SCIENCE

Berry, J., and Others. "A Remedial Course in College Biology?" Journal of College Science Teaching, 5 (3): 177-179; January 1976.

Describes a remedial course that uses an experiential approach. Presents the major topics in the course, outlines the subsections and modules used in the first unit, and explains the method used for student evaluation.

Hunter, Norman W. "A Chemistry Prep Course That Seems to Work." Journal of Chemical Education, 53 (5): 301; May 1976.

Describes a method of identifying students who are poorly prepared for freshman chemistry, and a preliminary chemistry course designed to prepare such students for the standard chemistry course.

Tomlinson, Barbara, and Tomlinson, Michael. Integrating Reading and Study Skills Into College Biology. Paper presented at the 1975 National Reading Conference, 1975. 8pp. (ED 124 903)*

In order to help college students in their transition to college level work in biology and to increase their achievements in that field, a special reading and study skills adjunct course was organized. The course focused on the methods and materials of the introductory course for biology majors and attempted to build the students' skill foundations for later transfer to independent science reading. Students attended the course on a voluntary, no-credit basis three times a week for eight weeks. A preliminary study of the effectiveness of the course conducted during the 1974-75 academic year indicated significant achievements by the adjunct class. A subsequent study in the fall quarter of 1975 indicated that courses which integrate the teaching of reading and study strategies with content material may be effective in increasing freshman achievement.